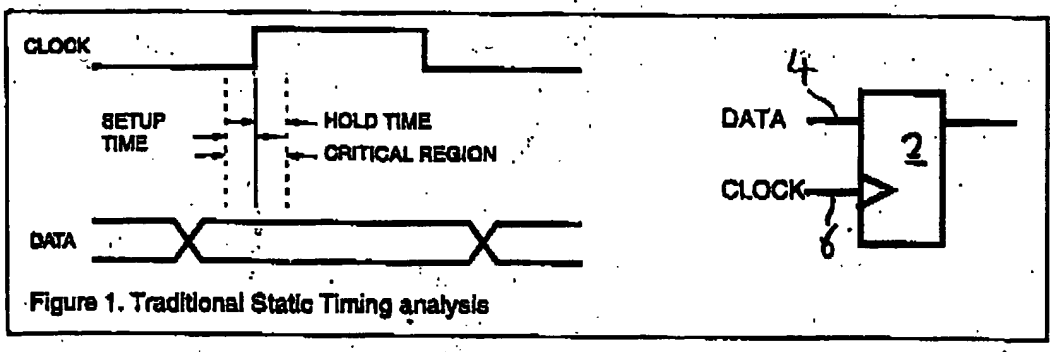

Figure 1. Traditional Static Timing analysis

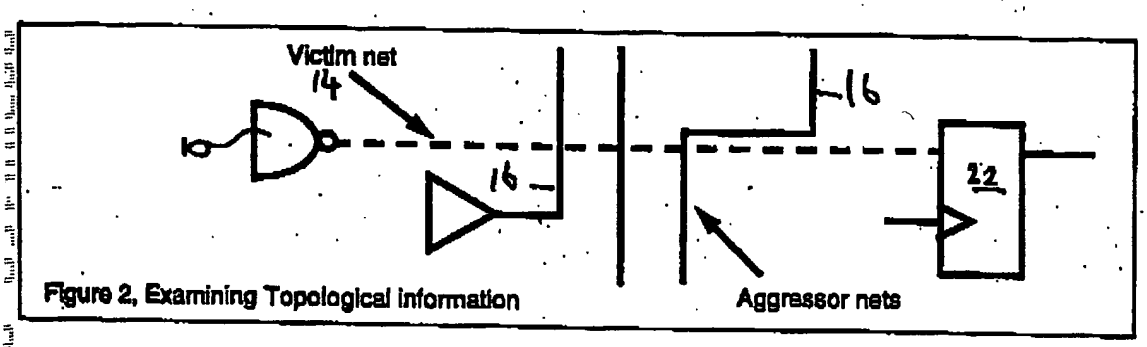

Figure 2, Examining Topological information

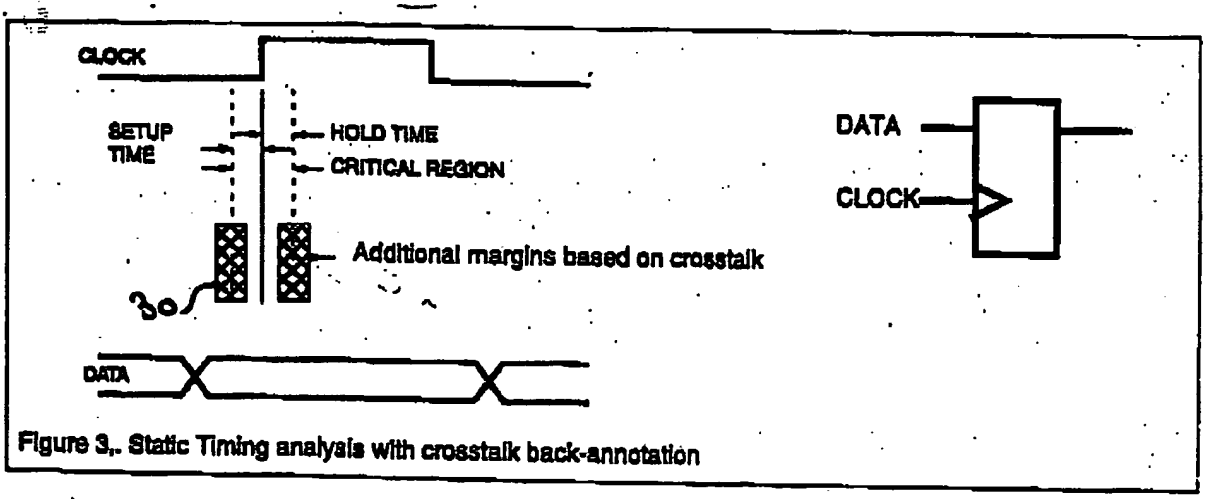

Figure 3,. Static Timing analysis with crosstalk back-annotation

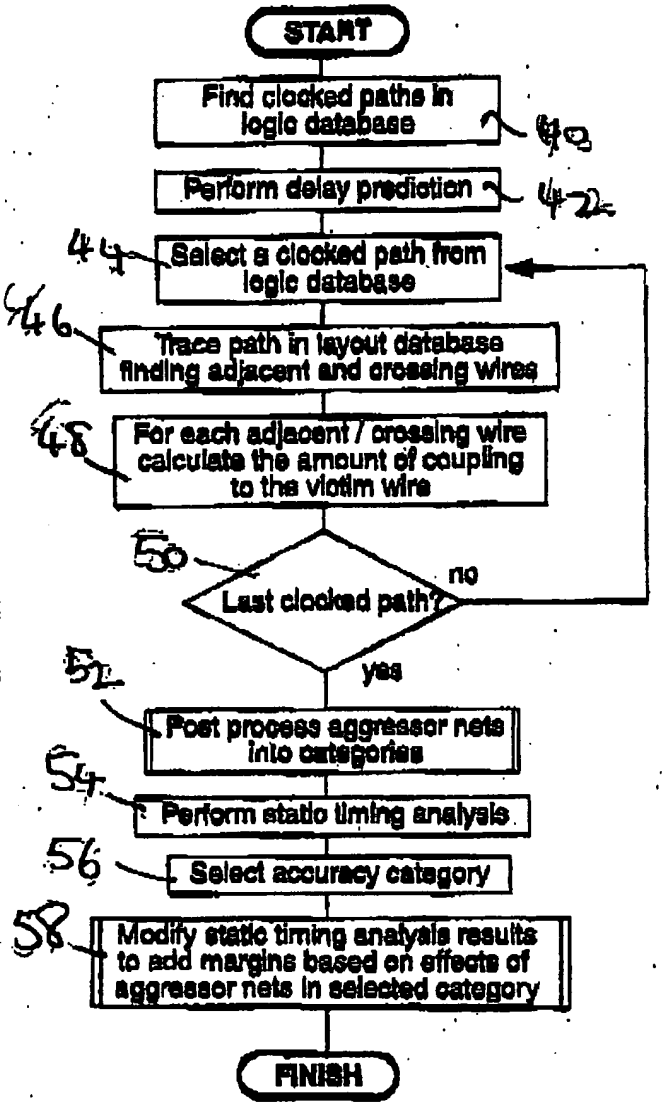
START
Find clocked paths in logic database
42
Perform delay prediction
42
44
Select a clocked path from logic database
46
Trace path in layout database finding adjacent and crossing wires
48
For each adjacent / crossing wire calculate the amount of coupling to the victim wire
50
Last clocked path?
no
yes
52
Post process aggressor nets into categories
54
Perform static timing analysis
56
Select accuracy category
58
Modify static timing analysis results to add margins based on effects of aggressor nets in selected category
FINISH

Figure 4

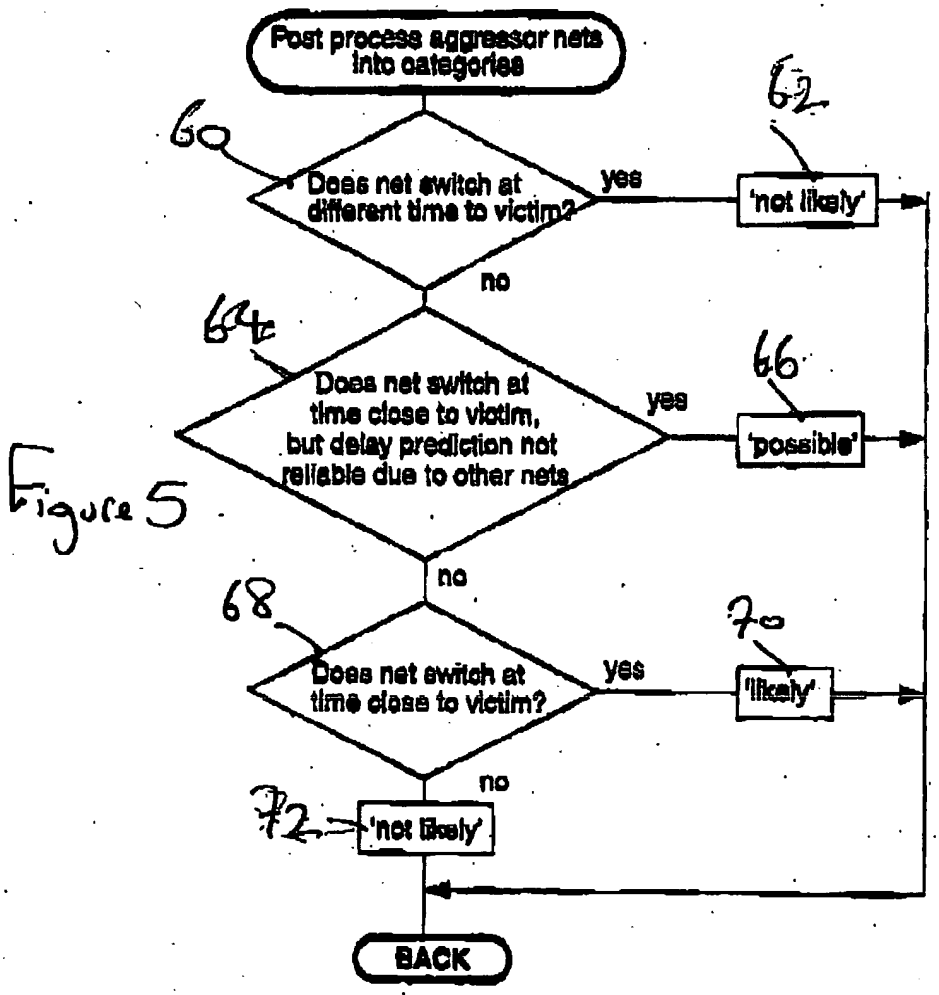
Post process aggressor nets into categories
60
Does net switch at different time to victim?
yes
62
'not likely'
no
64
Does net switch at time close to victim, but delay prediction not reliable due to other nets
yes
66
'possible'
no
68
Does net switch at time close to victim?
yes
70
'likely'
no
72
'not likely'
BACK

Figure 5

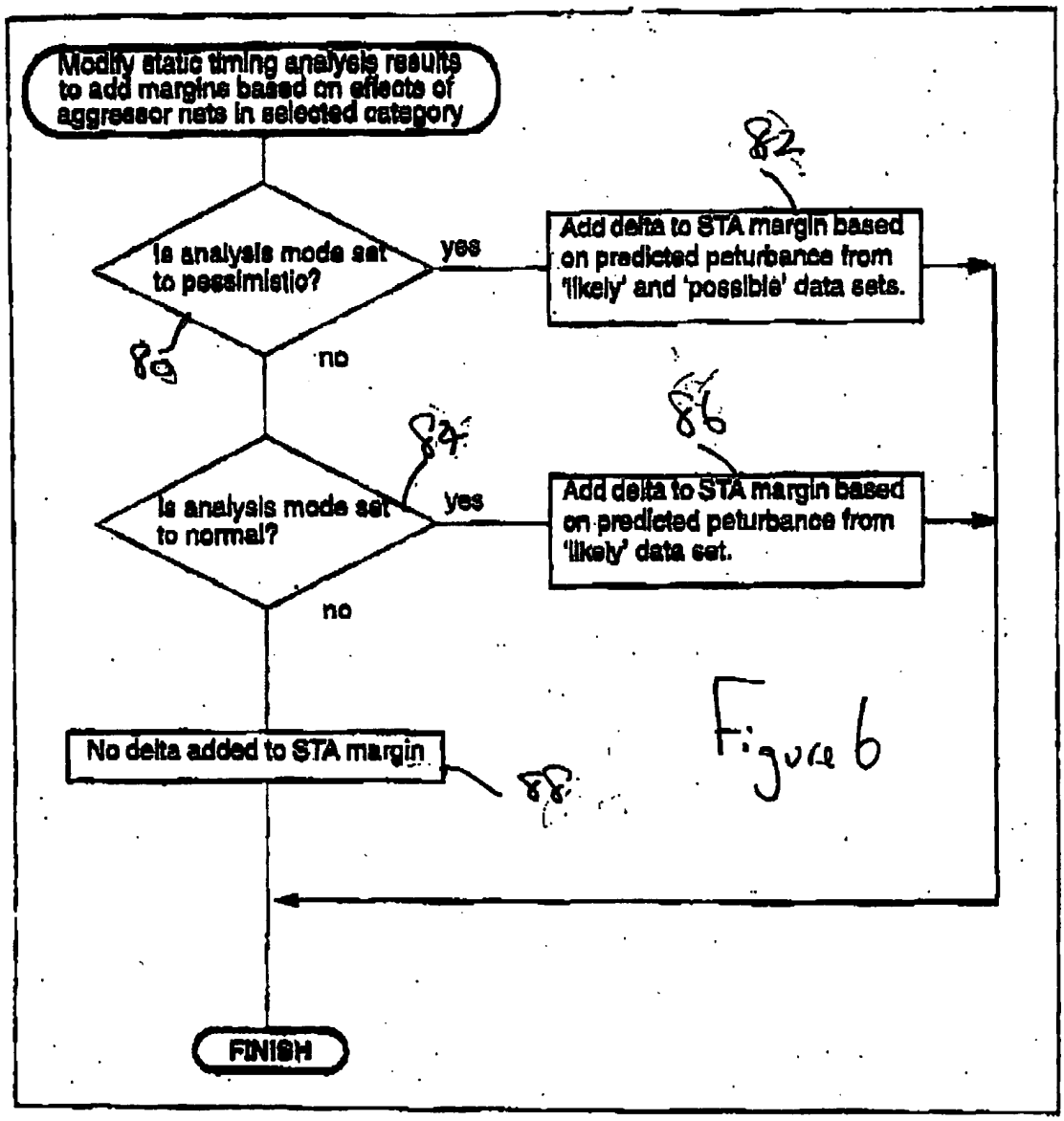
Modify static timing analysis results to add margins based on effects of aggressor nets in selected category
Is analysis mode set to pessimistic?
yes
no
Add delta to STA margin based on predicted peturbance from 'likely' and 'possible' data sets.
Is analysis mode set to normal?
yes
no
Add delta to STA margin based on predicted peturbance from 'likely' data set.
No delta added to STA margin
FINISH
82
84
86
88

Figure 6